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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

PATEL, GAUTAM

ART UNIT PAPER NUMBER

2655

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,152

Applicant(s)

LEE, WAI-HON

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-13 are pending for the examination.

Election/Restriction

2. The Applicant has elected claims 1-8 and 10-13 in paper no. 4. The Examiner would like to thank the Applicant for his quick response. Claims 9 stands non-elected. However after further consideration it was decided that examination of claim 9 will not be a further burden. So, all the claims are being examined in this office action. However the Examiner retains the right to restrict in future if claims becomes to burdensome.

Examination of **all claims** 1-13 follows.

Drawings/Objection

3. The drawings are objected for following reasons:

Figures 1-4 are not designated by a legend such as "Prior Art". The legend is necessary in order to clarify what applicant's invention is (see MPEP § 608.02g).

Applicant is required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must consist of following:

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment, and may be ***accompanied by a marked-up copy of one or more of the figures being amended, with annotations***. Any replacement drawing sheet ***must be identified in the top margin as "Replacement Sheet"*** and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. ***Any marked-up (annotated) copy showing changes must be labeled "Annotated Marked-up Drawings" and accompany the replacement sheet in the amendment (e.g., as an appendix).***

Corrections are required.

Claim Rejections - 35 U.S.C. § 112

4. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-13 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Page 5, paragraph 25, in the specification, simply states that "a single diffraction element could be used, but its distance from the detector could be varied to compensate for the difference in spacing between the laser sources". The specification does not disclose at all that "separation is between laser sources is determined". Or that how this done. It is nor clear how separation of the laser sources is determined what criteria is being used and how its related

Claim 13 has the same problem.

5. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, lines 2-3 "varying a distance of a diffraction grating from said detector to direct reflected light with said separation to said detector", are confusing and unclear. It is nor clear how separation and detector are related.

Claim 13 has the same problem.

Claim Rejections - 35 U.S.C. § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-7 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Hayashi et al., US. Patent Application Publication 2002/0060846 (hereafter Hayashi).

As to claim 1, Hayashi discloses the invention [an optical apparatus], as claimed [see Figs. 1] including a single detector and a grating, comprising:

7. The aforementioned claim 1, recites the following elements, inter alia, disclosed in Hayashi:

a single detector [fig. 1, unit 13] for detecting reflected light from both of said laser sources [paragraph 34]; and

a grating [fig.1, unit 5] having a surface configured to diffract reflected light from said first laser source to said detector, and allowing reflected light from said second laser source to pass directly to said detector without diffraction [para. 42].

8. The aforementioned claim 2, recites the following elements, inter alia, disclosed in Hayashi:

a first surface with a grating for diffracting reflected light from said first laser source, and a second surface without a grating for allowing reflected light from said second laser source to pass without diffraction [para. 41-42].

9. The aforementioned claim 3, recites the following elements, inter alia, disclosed in Hayashi:

a grating having a pattern configured to diffract reflected light of the wavelength of said first laser source, and allow reflected light of the wavelength of said second laser source to pass without diffraction [para. 41-42].

10. The aforementioned claim 4, recites the following elements, inter alia, disclosed in Hayashi:

a beam splitter [fig.1, unit 30] positioned to split the light from the laser sources and the reflected light so that the laser sources and the detector can be mounted at an angle to each other [para. 33-34].

11. The aforementioned claim 5, recites the following elements, inter alia, disclosed in Hayashi:

a 3-beam grating [fig. 1, unit 2] positioned to split the light from each of said laser sources into 3 beams before contacting said media [fig. 1, unit 6] [para. 33].

12. The aforementioned claim 6, recites the following elements, inter alia, disclosed in Hayashi:

a collimating lens [fig. 1, unit 40] positioned between said laser sources and said medium; and

an objective lens [fig. 1, unit 41] positioned between said collimating lens and said medium [para. 33].

13. The aforementioned claim 7, recites the following elements, inter alia, disclosed in Hayashi:

said laser sources have different wavelengths [650 nm and 780 nm], and an optical axis of each of said laser sources, at a point of entering said objective lens, is parallel to an axis of said objective lens [para. 32].

14. The aforementioned claim 11, recites the following elements, inter alia, disclosed in Hayashi:

providing a single detector [fig. 1, unit 13] for detecting reflected light from both of said laser sources [para. 33-34]; and

diffracting reflected light from said first laser source to said detector, and allowing reflected light from said second laser source to pass directly to said detector without diffraction [para. 41-42].

Claim Rejections - 35 U.S.C. § 103

15. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

zx This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 8 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi as applied to claim 1-7 above in view of AAPA [Applicants admitted prior art] specification pages 1-3 (hereafter AAPA).

As to claim 8, Hayashi discloses all of the above elements including a single photodetector [element 13] for receiving both lights. The Hayashi does not specifically disclose well known details of the detector, such as it could come in a four elements shape to the extent claimed. However, one of ordinary skill in the art at the time of invention would have known art four section detectors are well known in the art are routinely used for light detection.

Also, more importantly, AAPA clearly discloses that the four element detector [fig. 1(b)] [specification page 2]. Both Hayashi, and AAPA are interested in detecting signals with help of a single detector, both are showing dual light sources and both have all other elements necessary for a pickup of this kind..

Therefore, it would have been obvious to provide the system of Hayashi with four section detector means and associated details as taught by AAPA. The application or use of the four section detector as taught by AAPA would have been obvious, because the four section detector performs the same function in the same way as the photo detector of Hayashi's system, and is an equivalent element. One of ordinary skill in the art would have recognized that the four section detector of AAPA was equivalent and an obvious alternative to photo detector of system of Hayashi.

17. The aforementioned claim 10, recites the following elements, inter alia, disclosed in Hayashi:

- a 3-beam grating [fig. 1, unit 2] positioned to split the light from each of said laser sources into 3 beams before contacting said media;

- a beam splitter [fig. 1, unit 30] positioned to split the light from the laser sources and the reflected light so that the laser sources and the detector can be mounted at an angle to each other;

- a collimating lens [fig. 1, unit 40] positioned between said laser sources and said medium;

- an objective lens [fig. 1, unit 41] positioned between said collimating lens and said medium.

- wherein said laser sources have different wavelengths, and an optical axis of each of said laser sources, at a point of entering said objective lens, is parallel to an axis of said objective lens;

- a single detector [fig. 1, unit 13] for detecting reflected light from both of said laser sources; and

- a grating [fig. 1, unit 5] having a first surface with a grating configured to diffract reflected light from said first laser source to said detector, and having a non grating surface for allowing reflected light from said second laser source to pass directly to said detector without diffraction.

As to claim 10, Hayashi discloses all of the above elements including a single photodetector [element 13] for receiving both lights. The Hayashi does not specifically

disclose well known details of the detector, such as it could come in a four elements shape to the extent claimed. However, one of ordinary skill in the art at the time of invention would have known art four section detectors are well known in the art are routinely used for light detection.

Also, more importantly, AAPA clearly discloses that the four element detector [fig. 1(b)] [specification page 2]. Both Hayashi, and AAPA are interested in detecting signals with help of a single detector, both are showing dual light sources and both have all other elements necessary for a pickup of this kind..

Therefore, it would have been obvious to provide the system of Hayashi with four section detector means and associated details as taught by AAPA. The application or use of the four section detector as taught by AAPA would have been obvious, because the four section detector performs the same function in the same way as the photo detector of Hayashi's system, and is an equivalent element. One of ordinary skill in the art would have recognized that the four section detector of AAPA was equivalent and an obvious alternative to photo detector of system of Hayashi.

18. A search based on the best understanding of the claims has been made to find the most pertinent art, but no statement about invention will be appropriate at this time regarding the allowableness of claims 12-13 and no art rejection will be made in this office action regarding the claims 12-13, due to the speculation required to interpret the claims because of their indefiniteness under 35 U.S.C. 112, 1st and 2nd paragraphs as noted above (see In re Steele, 134 USPQ 292).

Allowable Subject Matter

19. Claim 9 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

NOTE: Claim 9 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose an apparatus which includes

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optical apparatus which includes two detectors "and second detector positioned to collect light from other orders of the diffracted reflected light from the first laser and a circuit for combining a signal from the second detector with a signal from the first laser detector". It is noted that the closest prior art, Hayashi et al. (US Application 2002/0060846 A1) shows a similar apparatus which has all the elements. However Hayashi fails to disclose a second light detector which is exclusively used for detection of other orders of lights and than combining that signal with first order of lights.

Other prior art cited

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Seong et al. (US. patent 6,587,481) "Light emitting module ..".
- b. Shimano et al. (US. patent 6,400,664) "Optical head ..".
- c. Takeda (US. patent application 0051421) Optical head drive
- d. Yanagawa (US. patent 6,363,038) "Optical pickup ..".
- e. Imada et al. (US. patent 5,404,344) "Recording/reproducing optical head".
- f. Yoo et al. (US. patent 5,777,973) "Reproducing and recording optical pickup ..".
- g. Kim (US. patent 6,552,974) Compatible optical pickup

Contact Information

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

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Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.



Gautam R. Patel
Primary Examiner
Group Art Unit 2655

GAUTAM R. PATEL
PRIMARY EXAMINER

May 22, 2004